

RECEIVED  
AU/10/2003  
2/30/2003  
CRF Processing Date: 2/30/2003  
Edited by: (STIC Staff)  
Verified by: (STIC Staff)Serial Number: 09/901,556C Changed a file from non-ASCII to ASCII Changed the margins in cases where the sequence text was "wrapped" down to the next line. Edited a format error in the Current Application Data section, specifically: Edited the Current Application Data section with the actual current number. The number inputted by the applicant was  the prior application data; or  other \_\_\_\_\_. Added the mandatory heading and subheadings for "Current Application Data". Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer. Changed the spelling of a mandatory field (the headings or subheadings), specifically: Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place. Inserted colons after headings/subheadings. Headings edited included: Deleted extra, invalid, headings used by an applicant, specifically: Deleted:  non-ASCII "garbage" at the beginning/end of files;  secretary initials/filename at end of file;  page numbers throughout text;  other invalid text, such as \_\_\_\_\_. Inserted mandatory headings, specifically: Corrected an obvious error in the response, specifically: Edited identifiers where upper case is used but lower case is required, or vice versa. Corrected an error in the Number of Sequences field, specifically: A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted. Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: \_\_\_\_\_ Other: \_\_\_\_\_  
\_\_\_\_\_



1600

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/901,556C

DATE: 07/30/2003

TIME: 19:08:39

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\07302003\I901556C.raw

3 <110> APPLICANT: Hotten, Gertrud  
 4 Neidhardt, Helge  
 5 Bechtold, Rolf  
 6 Pohl, Jens  
 8 <120> TITLE OF INVENTION: GROWTH/DIFFERENTIATION FACTORS OF THE TGF-B FAMILY  
 10 <130> FILE REFERENCE: 2923-0286  
 12 <140> CURRENT APPLICATION NUMBER: 09/901,556C  
 14 <141> CURRENT FILING DATE: 1999-09-24  
 16 <150> PRIOR APPLICATION NUMBER: 08/289,222  
 18 <151> PRIOR FILING DATE: 1994-08-12  
 20 <150> PRIOR APPLICATION NUMBER: DE P 44 23 190.3  
 22 <151> PRIOR FILING DATE: 1994-07-01  
 24 <150> PRIOR APPLICATION NUMBER: EPO 92102324.8  
 26 <151> PRIOR FILING DATE: 1992-02-12  
 28 <150> PRIOR APPLICATION NUMBER: PCT/EP93/00350  
 30 <151> PRIOR FILING DATE: 1993-02-12  
 32 <160> NUMBER OF SEQ ID NOS: 53  
 34 <170> SOFTWARE: PatentIn version 3.1  
 36 <210> SEQ ID NO: 1  
 38 <211> LENGTH: 1207  
 40 <212> TYPE: DNA  
 42 <213> ORGANISM: Homo sapiens  
 44 <400> SEQUENCE: 1  
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 47 gactgtgacc cccaaaggac agcttcccg aggcaaggca cccccc aaag caggatctgt 120  
 49 ccccagctcc ttccctgctga agaaggccag ggagcccg ggagccacgag agcccaagga 180  
 51 gccgttcgc ccacccccc tcacacccca cgagtacatg ctctcgctgt acaggacgct 240  
 53 gtccgatgct gacagaaaagg gaggcaacag cagcgtgaag ttggaggctg gcctggccaa 300  
 55 caccatcacc agctttattt acaaaggca agatgaccga ggtcccggtt tcaggaagca 360  
 57 gaggtacgtg tttgacatta gtgccttggga gaaggatggg ctgctggggg ccgagctgcg 420  
 59 gatcttgcgg aagaagccct cggacacggc caagccagcg gccccccggag gcgggcgggc 480  
 61 tgcccagctg aagctgtcca gctgccccag cggccggcag cggccctct tgctggatgt 540  
 63 ggcgtccgtg ccaggcctgg acggatctgg ctgggagggtg ttcgacatct ggaagcttt 600  
 65 ccgaaacttt aagaactcgg cccagctgtg cctggagctg gaggcctggg aacggggcag 660  
 67 ggcgtggac ctccgtggcc tgggcttcga ccgcggccgc cggcagggtcc acgagaaggc 720  
 69 cctgttcctg gtgtttggcc gcaccaagaa acgggacctg ttcttaatg agattaaggc 780  
 71 ccgcctctggc caggacgata agaccgtgtt tgagtacctg ttcagccagc ggcgaaaacg 840  
 73 gcggggccca ctggccactc gccaggcCAA gcgaccCAGC aagaaccta aggctcgctg 900  
 75 cagtccggaaag gcactgcattc tcaacttcaa ggacatggc tgggacgact ggatcatcgc 960  
 77 acccccttgag tacgaggcct tccactgcga ggggctgtgc gagttccat tgcgtccca 1020  
 79 cctggagccc acgaatcatg cagtcatcca gaccctgtatg aactccatgg accccgagtc 1080  
 81 cacaccaccc acctgtgtg tgcccacgcg gctgagtc accagcatcc tcttcattga 1140  
 83 ctctgccaac aacgtggtgt ataagcgtt tgaggacatg gtcgtggagt cgtgtggctg 1200

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 88 <210> SEQ ID NO: 2  
 90 <211> LENGTH: 2272  
 92 <212> TYPE: DNA  
 94 <213> ORGANISM: Homo sapiens  
 96 <400> SEQUENCE: 2

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99	ttgagaccac	agctgtttag	accctgagcc	ctgagtctgt	attgctcaag	aaggcccttc	120
101	cccagcaatg	acctccat	tgcttctggc	ctttctccctc	ctggctccaa	ccacagtggc	180
103	cactcccaga	gctggcggtc	agtgtccagc	atgtgggggg	cccacaccttgg	aactggagag	240
105	ccagcgggag	ctgcttcttg	atctggccaa	gagaagcatc	ttggacaaga	tgcacccac	300
107	ccagcggcca	acactgaacc	gccctgtgtc	cagagctgct	ttgaggactg	cactgcagca	360
109	cctccacggg	gtcccacagg	gggcacttct	agaggacaac	agggAACAGG	aatgtgaat	420
111	catcagctt	gctgagacag	gcctctccac	catcaaccag	actcgtctt	atttcactt	480
113	ctcctctgtat	agaactgctg	gtgacaggg	gttcagcag	gccagtctca	tgttcttgt	540
115	gcagctccct	tccaatacca	cttggacctt	gaaagtgaga	gtccttgc	tgggtccaca	600
117	taataccaaac	ctcacccctgg	ctactcagta	ctgtctggag	gtggatgcca	gtggctggca	660
119	tcaactcccc	ctagggcctg	aagctcaagc	tgcctgcagc	caggggcacc	tgaccctgga	720
121	gctggtaact	gaaggccagg	tagccagag	ctcagtcata	ctgggtggag	ctgcccata	780
123	gcctttgtg	gcagcccccgg	tgagagttgg	ggcacaacac	cagattcacc	gacgaggcat	840
125	cgactgccaa	ggagggtcca	gatgtgtctg	tcgacaagag	ttttttgtgg	actccgtga	900
127	gattggctgg	cacgactgga	tcatccagcc	tgagggtctac	gccatgaact	tctgcata	960
129	gcagtgc	ctacacatag	caggcatgcc	tgttattgt	gcctccttc	acactgcagt	1020
131	gctcaatctt	ctcaaggcca	acacagctgc	aggcaccact	ggagggggct	catgctgtgt	1080
133	acccacggcc	cgccggcccc	tgtctctgt	ctattatgac	agggacacga	acattgtcaa	1140
135	gactgacata	cctgacatgg	tagtagaggg	ctgtgggtgc	agttagtcta	tgtgtggat	1200
137	ggcagccca	aggttgcata	gaaaaacacg	cccctacaga	atgcacttc	tttgagagga	1260
139	ggaatgacc	tcatttctg	tccagaatgt	ggactccctc	ttcctgagca	tcttatggaa	1320
141	attacccac	cttgcacttg	aagaaacctt	catctaaagc	aagtcaactgt	gccatcttcc	1380
143	tgaccactac	cctcttctt	agggcata	ccatccccgt	atgcata	gctagccccca	1440
145	ctccagg	tcagacccat	ctccaaccat	gagaatgcc	atctggtcc	caggcaaaaga	1500
147	cacccttagc	tcacccctt	ta	aa	gcctccctgt	cctttctact	1560
149	caatggtccc	cactccaaga	tgagttgaca	caacccctc	ccccaa	tgtggatctc	1620
151	cagagaggcc	cttcttgg	ttcaccaaa	tttagatcac	tgctgcca	aatagaggct	1680
153	tacccatccc	cctcttgg	gtgagccct	gtccttctt	gttgtccagg	tgaactacta	1740
155	aagctcttt	tgcatacc	catccat	ttgtccctt	ctgccttct	ctatgccct	1800
157	aaggggtgac	ttgcctgagc	tctatcac	gagctccc	gccctctggc	ttcctgctg	1860
159	ggtcagg	tttcttatcc	ctgttccctc	tctgtctagg	tgtcatgtt	ctgtgtact	1920
161	gtggctattc	tgtgtcccta	cactac	ctacccctt	ccatggcccc	agctctgcct	1980
163	acattctgtat	ttttttttt	ttttttttt	tgaaa	aaaattc	tttattat	2040
165	tcctggtacc	actacc	tttacagggc	aatatac	atgtatgaa	aagaaaaaaga	2100
167	aaaagacaaa	gctacaacag	ataaaagacc	tcagaatgt	acatctaatt	gacactacat	2160
169	tgcattaatc	aatagctgca	cttttgc	actgtggct	tgacagtc	taacaagaag	2220
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174	<210>	SEQ ID NO:	3				
176	<211>	LENGTH:	401				
178	<212>	TYPE:	PRT				
180	<213>	ORGANISM:	Homo sapiens				
182	<400>	SEQUENCE:	3				

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184 Pro Gly Gly Pro Glu Pro Lys Pro Gly His Pro Pro Gln Thr Arg Gln  
 185 1 5 10 15  
 188 Ala Thr Ala Arg Thr Val Thr Pro Lys Gly Gln Leu Pro Gly Gly Lys  
 189 20 25 30  
 192 Ala Pro Pro Lys Ala Gly Ser Val Pro Ser Ser Phe Leu Leu Lys Lys  
 193 35 40 45  
 196 Ala Arg Glu Pro Gly Pro Pro Arg Glu Pro Lys Glu Pro Phe Arg Pro  
 197 50 55 60  
 200 Pro Pro Ile Thr Pro His Glu Tyr Met Leu Ser Leu Tyr Arg Thr Leu  
 201 65 70 75 80  
 204 Ser Asp Ala Asp Arg Lys Gly Gly Asn Ser Ser Val Lys Leu Glu Ala  
 205 85 90 95  
 208 Gly Leu Ala Asn Thr Ile Thr Ser Phe Ile Asp Lys Gly Gln Asp Asp  
 209 100 105 110  
 212 Arg Gly Pro Val Val Arg Lys Gln Arg Tyr Val Phe Asp Ile Ser Ala  
 213 115 120 125  
 216 Leu Glu Lys Asp Gly Leu Leu Gly Ala Glu Leu Arg Ile Leu Arg Lys  
 217 130 135 140  
 220 Lys Pro Ser Asp Thr Ala Lys Pro Ala Ala Pro Gly Gly Arg Ala  
 221 145 150 155 160  
 224 Ala Gln Leu Lys Leu Ser Ser Cys Pro Ser Gly Arg Gln Pro Ala Ser  
 225 165 170 175  
 228 Leu Leu Asp Val Arg Ser Val Pro Gly Leu Asp Gly Ser Gly Trp Glu  
 229 180 185 190  
 232 Val Phe Asp Ile Trp Lys Leu Phe Arg Asn Phe Lys Asn Ser Ala Gln  
 233 195 200 205  
 236 Leu Cys Leu Glu Leu Glu Ala Trp Glu Arg Gly Arg Ala Val Asp Leu  
 237 210 215 220  
 240 Arg Gly Leu Gly Phe Asp Arg Ala Ala Arg Gln Val His Glu Lys Ala  
 241 225 230 235 240  
 244 Leu Phe Leu Val Phe Gly Arg Thr Lys Lys Arg Asp Leu Phe Phe Asn  
 245 245 250 255  
 248 Glu Ile Lys Ala Arg Ser Gly Gln Asp Asp Lys Thr Val Tyr Glu Tyr  
 249 260 265 270  
 252 Leu Phe Ser Gln Arg Arg Lys Arg Arg Ala Pro Leu Ala Thr Arg Gln  
 253 275 280 285  
 256 Gly Lys Arg Pro Ser Lys Asn Leu Lys Ala Arg Cys Ser Arg Lys Ala  
 257 290 295 300  
 260 Leu His Val Asn Phe Lys Asp Met Gly Trp Asp Asp Trp Ile Ile Ala  
 261 305 310 315 320  
 264 Pro Leu Glu Tyr Glu Ala Phe His Cys Glu Gly Leu Cys Glu Phe Pro  
 265 325 330 335  
 268 Leu Arg Ser His Leu Glu Pro Thr Asn His Ala Val Ile Gln Thr Leu  
 269 340 345 350  
 272 Met Asn Ser Met Asp Pro Glu Ser Thr Pro Pro Thr Cys Cys Val Pro  
 273 355 360 365  
 276 Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe Ile Asp Ser Ala Asn Asn  
 277 370 375 380  
 280 Val Val Tyr Lys Gln Tyr Glu Asp Met Val Val Glu Ser Cys Gly Cys

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290	<211>	LENGTH: 352		
292	<212>	TYPE: PRT		
294	<213>	ORGANISM: Homo sapiens		
296	<400>	SEQUENCE: 4		
298	Met Thr Ser Ser Leu Leu Leu Ala Phe Leu Leu Leu Ala Pro Thr Thr			
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302	Val Ala Thr Pro Arg Ala Gly Gly Gln Cys Pro Ala Cys Gly Gly Pro			
303	20	25	30	
306	Thr Leu Glu Leu Glu Ser Gln Arg Glu Leu Leu Leu Asp Leu Ala Lys			
307	35	40	45	
310	Arg Ser Ile Leu Asp Lys Leu His Leu Thr Gln Arg Pro Thr Leu Asn			
311	50	55	60	
314	Arg Pro Val Ser Arg Ala Ala Leu Arg Thr Ala Leu Gln His Leu His			
315	65	70	75	80
318	Gly Val Pro Gln Gly Ala Leu Leu Glu Asp Asn Arg Glu Gln Glu Cys			
319	85	90	95	
322	Glu Ile Ile Ser Phe Ala Glu Thr Gly Leu Ser Thr Ile Asn Gln Thr			
323	100	105	110	
326	Arg Leu Asp Phe His Phe Ser Ser Asp Arg Thr Ala Gly Asp Arg Glu			
327	115	120	125	
330	Val Gln Gln Ala Ser Leu Met Phe Phe Val Gln Leu Pro Ser Asn Thr			
331	130	135	140	
334	Thr Trp Thr Leu Lys Val Arg Val Leu Val Leu Gly Pro His Asn Thr			
335	145	150	155	160
338	Asn Leu Thr Leu Ala Thr Gln Tyr Leu Leu Glu Val Asp Ala Ser Gly			
339	165	170	175	
342	Trp His Gln Leu Pro Leu Gly Pro Glu Ala Gln Ala Ala Cys Ser Gln			
343	180	185	190	
346	Gly His Leu Thr Leu Glu Leu Val Leu Glu Gly Gln Val Ala Gln Ser			
347	195	200	205	
350	Ser Val Ile Leu Gly Gly Ala Ala His Arg Pro Phe Val Ala Ala Arg			
351	210	215	220	
354	Val Arg Val Gly Gly Lys His Gln Ile His Arg Arg Gly Ile Asp Cys			
355	225	230	235	240
358	Gln Gly Gly Ser Arg Met Cys Cys Arg Gln Glu Phe Phe Val Asp Phe			
359	245	250	255	
362	Arg Glu Ile Gly Trp His Asp Trp Ile Ile Gln Pro Glu Gly Tyr Ala			
363	260	265	270	
366	Met Asn Phe Cys Ile Gly Gln Cys Pro Leu His Ile Ala Gly Met Pro			
367	275	280	285	
370	Gly Ile Ala Ala Ser Phe His Thr Ala Val Leu Asn Leu Leu Lys Ala			
371	290	295	300	
374	Asn Thr Ala Ala Gly Thr Thr Gly Gly Ser Cys Cys Val Pro Thr			
375	305	310	315	320
378	Ala Arg Arg Pro Leu Ser Leu Leu Tyr Tyr Asp Arg Asp Ser Asn Ile			
379	325	330	335	

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382 Val Lys Thr Asp Ile Pro Asp Met Val Val Glu Ala Cys Gly Cys Ser  
 383 340 345 350

386 <210> SEQ ID NO: 5  
 388 <211> LENGTH: 265  
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 392 <213> ORGANISM: Homo sapiens  
 394 <400> SEQUENCE: 5

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397 aggcatgcct	ggtattgctg	cctccttca	cactgcagtg	ctcaatcttc	tcaaggccaa	120
399 cacagctgca	ggcaccactg	gagggggctc	atgctgtgt	cccacggccc	ggcgccccct	180
401 gtctctgctc	tattatgaca	gggacagcaa	cattgtcaag	actgacatac	ctgacatggt	240
403 agtagaggcc	tgtgggtgca	gttag				265

406 <210> SEQ ID NO: 6  
 408 <211> LENGTH: 139  
 410 <212> TYPE: DNA  
 412 <213> ORGANISM: Homo sapiens  
 414 <400> SEQUENCE: 6

415 catcgacacc	cttgagttacg	aggctttcca	ctgcgagggg	ctgtgcgagt	tcccatggcg	60
417 ctcccacctg	gagcccacga	atcatgcagt	catccagacc	ctgatgaact	ccatggaccc	120
419 cgagtccaca	ccacccacc					139

422 <210> SEQ ID NO: 7  
 424 <211> LENGTH: 27  
 426 <212> TYPE: DNA  
 428 <213> ORGANISM: Homo sapiens  
 430 <400> SEQUENCE: 7

431 atgaactcca	tggaccccgaa	gtccaca				27
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434 <210> SEQ ID NO: 8  
 436 <211> LENGTH: 30  
 438 <212> TYPE: DNA  
 440 <213> ORGANISM: Homo sapiens  
 442 <400> SEQUENCE: 8

443 cttctcaagg	ccaacacagc	tgcaggcacc				30
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446 <210> SEQ ID NO: 9  
 448 <211> LENGTH: 9  
 450 <212> TYPE: PRT  
 452 <213> ORGANISM: Homo sapiens  
 454 <400> SEQUENCE: 9

456 Met Asn Ser Met Asp Pro Glu Ser Thr  
 457 1 5

460 <210> SEQ ID NO: 10  
 462 <211> LENGTH: 10  
 464 <212> TYPE: PRT  
 466 <213> ORGANISM: Homo sapiens  
 468 <400> SEQUENCE: 10

470 Leu Leu Lys Ala Asn Thr Ala Ala Gly Thr  
 471 1 5 10

474 <210> SEQ ID NO: 11  
 476 <211> LENGTH: 44  
 478 <212> TYPE: DNA

**VERIFICATION SUMMARY**

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